

The opinion in support of the decision being entered today
was **not** written for publication in and
is **not** binding precedent of the Board.

Paper No. 13

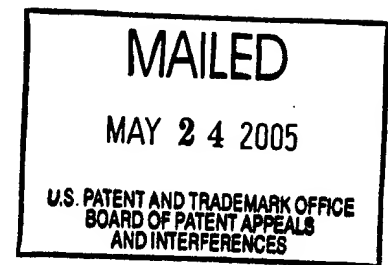
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROB A. BEUKER

Appeal No. 2005-0294
Application No. 09/624,522

ON BRIEF



Before BARRY, SAADAT, and NAPPI, Administrative Patent Judges.

NAPPI, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 of the final rejection of claims 1 through 8 which constitute all the claims remaining in the application. For the reasons stated *infra* we will not sustain the examiner's rejection of these claims.

THE INVENTION

The invention relates to a motion estimation technique for use with video coding. The technique uses a block based motion vector estimation technique

which compares a plurality of candidate vectors. Some of these candidate vectors are used to estimate a global motion vector. The global motion vector is applied as a one of the candidate motion vectors. See page 2 of appellant's specification. The normal motion vectors are to track change in the images and the global motion vectors are to track global motion in the images. See page 3 of appellant's specification.

Claim 1 is representative of the invention and reproduced below:

1. A motion vector estimation method, comprising the steps:
 - carrying out a block-based motion vector estimation process that involves comparing a plurality of candidate vectors to determine block-based motion vectors;
 - determining at least a most frequently occurring block-based motion vector;
 - carrying out a global motion vector estimation process using at least the most frequently occurring block-based motion vector to obtain a global motion vector; and
 - applying the global motion vector as a candidate vector to the block-based motion vector estimation process.

THE REFERENCES

The references relied upon by the examiner are:

Horne	5,473,379	Dec. 5, 1995
De Haan et al. (De Haan)	6,385,245	May 7, 2002 (filed Sep. 18, 1998)
Zhu	6,462,791	Oct. 8, 2002 (filed Jun. 30, 1997)

THE REJECTIONS AT ISSUE

Claims 1 and 4 through 7 stand rejected under 35 U.S.C. § 102 as being anticipated by Horne. Claims 2 and 3 stand rejected under 35 U.S.C. § 103 as being obvious over Horne in view of Zhu. Claim 8 stands rejected under 35 U.S.C. § 103 as being obvious over Horne in view of De Haan. Throughout the opinion we make reference to the brief and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of anticipation and obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellant's arguments set forth in the brief along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

With full consideration being given to the subject matter on appeal, the examiner's rejections and the arguments of appellant and the examiner, for the reasons stated *infra* we will not sustain the examiner's rejection of claims 1, and 4 through 7 under 35 U.S.C. § 102 or the examiner's rejection of claims 2, 3 and 8 under 35 U.S.C. § 103.

Appellant argues on page 5 of the brief:

[I]t is quite evident that according to claim 1, the global motion vector is indeed included in the plurality of candidate vectors to be compared to determine the block based motion vectors.

It is Appellant's contention that this is neither shown nor suggested by Horne, in which the global motion vector is only used to determine a window.

On page 6 of the brief, appellant cites column 9 lines 31-38 of Horne to support his contention. Further, on page 6 of the brief, appellant argues:

A further examination of Fig. 3A leads to the fact that GM [global motion vector] is not used anywhere else in determining the best (most frequently occurring) block-based motion vector $MV_{i,d}$. As such, GM, the global motion vector, is only used to determine the window A_{ref} . However, claim 1 specifically states "carrying out a block-based motion vector estimation process that involves comparing a plurality of candidate vectors to determine block-based motion vectors" (Emphasis Original)

In response the examiner states, on page 10 of the answer:

Horne further discloses applying the global motion vector as a candidate vector to the block-based motion vector estimation process (col. 13, lines 17-22, e.g. the global motion vector (408 of fig. 4) is provided to the motion estimator (104 of fig. 1) in order to performing [sic] the method as shown in fig. 3A, so the global motion vector is considered as candidate vector). In view of the discussion above, Horne anticipated the claimed feature.

We disagree with the examiner's interpretation of the reference. We find that Horne teaches a system of motion estimation which makes use of a search window to find matching blocks of video. The location of the search window is adjusted based upon estimated global motion of the entire video. (See column 2 lines 56-67). While we concur with the examiner that Horne teach, in column 13, lines 17-22, that the global motion vector is provided to the motion estimator

(see figure 1), we do not find that the global motion vector becomes a candidate vector. Horne states that the global motion vector is provided to the motion estimator to perform the method of figure 3A. Horne discusses the method of figure 3A in column 9 lines 35-38, stating: "[t]he location of A_{ref} within a [sic] the reference frame is defined by first centering A_{ref} on the new block position $BP_{i,t}$, and then displacing A_{ref} by an amount defined by the stored global motion vector GM." Thus, we find, as appellant argues, that Horne teaches that the global motion vectors are used to define a window, and we find no teaching or suggestion that the global motion vector should be applied as a candidate vector as recited in claim 1 and 4. As we find that Horne does not teach all of the limitations of independent claims 1 and 4 we will not sustain the examiner's rejection of claims 1 and 4 through 7 under 35 U.S.C. § 102.

We next consider the examiner's rejections of claims 2, 3 and 8 under 35 U.S.C. § 103. The examiner sets forth these rejections on pages 7 through 9 of the answer. In these rejections the examiner relies upon Horne as discussed above and additionally relies upon the teachings of either Zhu or De Haan. Claims 2, 3 and 8 all include the limitation of a global motion vector being applied as a candidate vector. The examiner has not asserted, nor do we find that Zhu or De Haan teaches or suggests determining a global motion vector and applying it as a candidate vector as claimed. Accordingly, we will not sustain the examiner's rejection of claims 2, 3 and 8 under 35 U.S.C. § 103.

CONCLUSION

We will not sustain the examiner's rejection of claims 1, and 4 through 7 under 35 U.S.C. § 102 or the examiner's rejection of claims 2, 3 and 8 under 35 U.S.C. § 103.

REVERSED

~~LANCE LEONARD BARRY~~
~~Administrative Patent Judge~~

MAHSHID D. SAADAT
Administrative Patent Judge

~~ROBERT E. NAPPI~~
Administrative Patent Judge

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